Abstract

Title: Appropriateness of choice to walk or run, depending on the speed of a quick relocation with load carriage

Objectives: Comparison of physiological response of organism during the walk and run at speed 6 - 7,4 $km.h^{-1}$ with carried load 15 kg with follow-up determination of critical speed in connection with economy of these activities where there were discovered sizes of correlation with proportional representation of fat free mass and working length of lower limb.

Methods: The method applied in this research was the quantitative research based on intra-individual and inter-individual comparative analysis.

Results: Based on the measured data it has been found out that there is a critical speed at 7,43 $km.h^{-1}$ (±0,53), with respect to economy of walk compared to run with 15 kg load. The average heart rate during the critical speed was 129 BPM (±9,67). The average energy expenditure per minute during the critical speed was 11,9 kcal (±2,04). In addition there were discovered sizes of correlation between critical speed and the working length of lower limb where r_P = 0,9203 was statiscitally significant. (α = 0,05) and between critical speed and proportional representation of fat free mass, where r_P = 0,1529 was not found to be statistically significant (α = 0,05).

Keywords: quick relocation, load carriage, run, walk, energy expenditure, heart rate, FFM (Fat Free Mass), working length of lower limb